IN THE CLAIMS:

Please amend the claims as follows.

1. (Currently Amended) A system for performing engine baseline modeling, comprising:

an engine service database containing engine data, wherein the engine data includes at least time-varying engine data;

a preprocessor for processing the engine data into a predetermined format;

an engine baseline modeling component that builds an initial engine baseline model from the preprocessed data using a regression analysis, wherein the regression analysis relates engine performance variables as a function of engine operating conditions,

wherein the engine baseline modeling component:

applies a smoothing algorithm to the initial engine baseline model~~, wherein applying a smoothing algorithm comprises generating~~ to generate a smoothed effect, ~~to reduce effects of the time-varying engine data, and wherein the engine baseline modeling component further~~

eliminates the smoothed effect from the initial engine baseline model to isolate a plurality of deterioration time effects on a measured parameter, and

removes the deterioration time effects from the initial engine baseline model to generate a detrended engine baseline model; and

a model diagnostic component that evaluates the performance of the detrended engine baseline model.

2. (Original) The system of claim 1, wherein the smoothing algorithm includes a moving average calculation.

3. (Original) The system of claim 1, further comprising the engine baseline modeling component performing repeated applications of the smoothing algorithm to the detrended engine baseline model.

4. (Original) The system of claim 1, wherein the preprocessor comprises a data acquisition component that extracts the engine data from the engine services database.

5. (Original) The system of claim 1, wherein the preprocessor comprises a data scrubbing component that cleans the engine data.

6. (Original) The system of claim 1, wherein the preprocessor comprises a data segmenting component that segments the engine data into a plurality of groups.

7. (Original) The system of claim 1, wherein the engine baseline modeling component comprises a metric component that validates the detrended engine baseline model.

8. (Original) The system of claim 1, wherein the engine baseline modeling component comprises a heuristics component that generates rules for cleaning the preprocessed data.

9. (Cancelled)

10. (Previously Presented) A system for performing engine baseline modeling, comprising:

an engine service database containing engine data;

a preprocessor for processing the engine data into a predetermined format, wherein the preprocessor comprises a data segmenting component that segments the engine data into a plurality of groups;

an engine baseline modeling component that builds an initial engine baseline model from the preprocessed data using a regression analysis, wherein the regression analysis relates engine performance variables as a function of engine operating conditions,

wherein the engine baseline modeling component identifies correlated groups of engine data based upon the initial engine baseline model,

wherein the engine baseline modeling component combines data from correlated groups, and

wherein the engine baseline modeling component builds a final engine baseline model from the combined data using a regression analysis; and

a model diagnostic component that evaluates the performance of the final engine baseline model.

11. (Original) The system of claim 10, wherein the combination of data from correlated groups is performed by utilizing a weighted average technique to fit all engine baseline parameter trends to one primary trend.

12. (Previously Presented) A system for performing engine baseline modeling, comprising:

an engine service database containing engine data;

a preprocessor for processing the engine data into a predetermined format, wherein the preprocessor comprises a data segmenting component that segments the engine data into a plurality of groups;

an engine baseline modeling component that builds an initial engine baseline model from the preprocessed data using a regression analysis, the initial engine baseline model represented by a plurality of parameter estimates, wherein the regression analysis relates engine performance variables as a function of engine operating conditions,

wherein the engine baseline modeling component identifies segments relating to related engines,

wherein the engine baseline modeling component smoothes the parameter estimates for each of the identified related engine segments, and

wherein the engine baseline modeling component builds a final engine baseline model from the averaged data using a regression analysis ;and

a model diagnostic component that evaluates the performance of the final engine baseline model.

13. (Currently Amended) A method for performing engine baseline modeling, comprising:

storing engine data in an engine service database, wherein the engine data includes at least time-varying engine data;

processing the engine data into a predetermined format;

building an initial engine baseline model from the processed data using a regression analysis, wherein the regression analysis relates engine performance variables as a function of engine operating conditions,

applying a smoothing algorithm to the initial engine baseline model~~,~~ ~~wherein applying a smoothing algorithm comprises generating~~ to generate a smoothed effect ~~to reduce effects of the time-varying engine data~~;

eliminating the smoothed effect from the initial engine baseline model to isolate a plurality of deterioration time effects on a measured parameter; and

removing the deterioration time effects from the initial engine baseline model to generate ~~generating~~ a detrended engine baseline model; and

using the detrended baseline model to perform at least one of monitoring engine status, predicting future engine behavior, diagnosing engine faults, determining engine performance, determining engine quality and designing new engine systems.

14. (Original) The method of claim 13, wherein the smoothing algorithm includes a moving average calculation.

15. (Original) The method of claim 13, further comprising repeatedly applying the smoothing algorithm to the detrended engine baseline model.

16. (Original) The method of claim 13, further comprising extracting the engine data from the engine services database.

17. (Original) The method of claim 13, wherein the processing step further comprises cleaning the engine data.

18. (Original) The method of claim 13, wherein the processing step further comprises segmenting the engine data into a plurality of groups.

19. (Original) The method of claim 13, further comprising validating the detrended engine baseline model.

20. (Original) The method of claim 13, further comprising generating rules for cleaning the preprocessed data.

21. (Original) The method of claim 13, further comprising evaluating the performance of the detrended engine baseline model.

22. (Previously Presented) A method for performing engine baseline modeling, comprising:

storing engine data in an engine service database;

processing the engine data into a predetermined format;

segmenting the engine data into a plurality of groups;

building an initial engine baseline model from the processed data using a regression analysis, wherein the regression analysis relates engine performance variables as a function of engine operating conditions;

identifying correlated groups of engine data based upon the initial engine baseline model;

combining data from correlated groups;

building a final engine baseline model from the combined data using a regression analysis; and

using the final engine baseline model to perform at least one of monitoring engine status, predicting future engine behavior, diagnosing engine faults, determining engine performance, determining engine quality and designing new engine systems.

23. (Original) The method of claim 22, wherein the step of combining of data from correlated groups comprises utilizing a weighted average technique to fit all engine baseline parameter trends to one primary trend.

24. (Previously Presented) A method for performing engine baseline modeling, comprising:

storing engine data in an engine service database;

processing the engine data into a predetermined format;

segmenting the engine data into a plurality of groups;

building an initial engine baseline model from the processed data using a regression analysis, the initial engine baseline model represented by a plurality of parameter estimates, wherein the regression analysis relates engine performance variables as a function of engine operating conditions;

identifying segments relating to related engines;

smoothing the parameter estimates for each of the identified related engine segments;

building a final engine baseline model from the averaged data using a regression analysis; and

using the final engine baseline model to perform at least one of monitoring engine status, predicting future engine behavior, diagnosing engine faults, determining engine performance, determining engine quality and designing new engine systems.

25. (Currently Amended) A computer-readable medium storing computer instructions for instructing a computer system to perform engine baseline modeling, the computer instructions comprising:

one or more instructions for storing engine data in an engine service database, wherein the engine data includes at least time-varying engine data;

one or more instructions for processing the engine data into a predetermined format;

one or more instructions for building an initial engine baseline model from the processed data using a regression analysis, wherein the regression analysis relates engine performance variables as a function of engine operating conditions;

one or more instructions for applying a smoothing algorithm to the initial engine baseline model~~, wherein applying a smoothing algorithm comprises generating~~ to generate a smoothed effect ~~to reduce effects of the time-varying engine data~~;

one or more instructions for eliminating the smoothed effect from the initial engine baseline model to isolate a plurality of deterioration time effects on a measured parameter; and

one or more instructions for removing the deterioration time effects from the initial engine baseline model to generate a detrended engine baseline model; and

one or more instructions for using the detrended baseline model to perform at least one of monitoring engine status, predicting future engine behavior, diagnosing engine faults, determining engine performance, determining engine quality and designing new engine systems.

26. (Original) The computer-readable medium of claim 25, wherein the smoothing algorithm includes a moving average calculation.

27. (Original) The computer-readable medium of claim 25, further comprising one or more instructions for repeatedly applying the smoothing algorithm to the detrended engine baseline model.

28. (Original) The computer-readable medium of claim 25, further comprising one or more instructions for extracting the engine data from the engine services database.

29. (Original) The computer-readable medium of claim 25, wherein the one or more instructions for processing further comprise one or more instructions for cleaning the engine data.

30. (Original) The computer-readable medium of claim 25, wherein the one or more instructions for processing further comprise one or more instructions for segmenting the engine data into a plurality of groups.

31. (Original) The computer-readable medium of claim 25, further comprising one or more instructions for validating the detrended engine baseline model.

32. (Original) The computer-readable medium of claim 25, further comprising one or more instructions for generating rules for cleaning the preprocessed data.

33. (Original) The computer-readable medium of claim 25, further comprising one or more instructions for evaluating the performance of the detrended engine baseline model.

34. (Previously Presented) A computer-readable medium storing computer instructions for instructing a computer system to perform engine baseline modeling, the computer instructions comprising:

one or more instructions for storing engine data in an engine service database;

one or more instructions for processing the engine data into a predetermined format;

one or more instructions for segmenting the engine data into a plurality of groups;

one or more instructions for building an initial engine baseline model from the processed data using a regression analysis, wherein the regression analysis relates engine performance variables as a function of engine operating conditions;

one or more instructions for identifying correlated groups of engine data based upon the initial engine baseline model;

one or more instructions for combining data from correlated groups;

one or more instructions for building a final engine baseline model from the combined data using a regression analysis, and

one or more instructions for using the final engine baseline model to perform at least one of monitoring engine status, predicting future engine behavior, diagnosing engine faults, determining engine performance, determining engine quality and designing new engine systems.

35. (Original) The computer-readable medium of claim 22, wherein the one or more instructions for combining data from correlated groups comprises one or more instructions for applying a weighted average technique to fit all engine baseline parameter trends to one primary trend.

36. (Previously Presented) A computer-readable medium storing computer instructions for instructing a computer system to perform engine baseline modeling, the computer instructions comprising:

one or more instructions for storing engine data in an engine service database;

one or more instructions for processing the engine data into a predetermined format;

one or more instructions for segmenting the engine data into a plurality of groups;

one or more instructions for building an initial engine baseline model from the processed data using a regression analysis, the initial engine baseline model represented by a plurality of parameter estimates, wherein the regression analysis relates engine performance variables as a function of engine operating conditions;

one or more instructions for identifying segments relating to related engines;

one or more instructions for smoothing the parameter estimates for each of the identified related engine segments;

one or more instructions for building a final engine baseline model from the averaged data using a regression analysis, and

one or more instructions for using the final engine baseline model to perform at least one of monitoring engine status, predicting future engine behavior, diagnosing engine faults, determining engine performance, determining engine quality and designing new engine systems.